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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/730,756	HAMPDEN-SMITH ET AL.	
	Examiner	Art Unit	
	C. Melissa Koslow	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62-92 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 62-92 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/19/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/12/05</u> . | 6) <input type="checkbox"/> Other: ____. |

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The disclosure is objected to because of the following informalities: On page 47, line 25; page 53, line 16 and page 55, line 16; the variables X and Y are not defined. The specification teaches $(Y,Gd)BO_3$. It is unclear if both yttrium and gadolinium must be present or if only one is present, i.e. does (Y,Gd) mean $Y_{1-x}Gd_x$, where $0 \leq x \leq 1$ or $0 < x < 1$. The X variable in table V is not defined. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The size range of claim 76, where the average particle size is not greater than about 5 microns is not taught in the specification. the specification teaches a preferred lower limit of about 0.1 micron. The subject matter of claim 85 is not found in the specification. Finally, there is no teaching in the specification of mixtures of the taught red phosphors as claimed in claim 92 or of the mixture of the taught green phosphors as claimed in claim 92.

Claims 69, 71, 76 and 78-92 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification teaches $BaMgAl_{10}O_{17}:Eu$ or Mn . Claims 69, 71, 82, 83 and 92 teaches $BaMgAl_xO_y:Eu$ or Mn . This discrepancy as to the formula needs to be corrected. The specification teaches on page 58 that the phosphor particles are spherical. Claims 76 and 78-92 do not teach this limitation. This discrepancy needs to be corrected.

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Claims 67, 69-71, 82-85, 87 and 89-92 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 69-71, 82-85 and 92 are indefinite since the variables X and Y are not defined. Claims 67 and 90-92 are indefinite since it is unclear if both yttrium and gadolinium must be present or if only one is present, i.e. does (Y,Gd) mean $Y_{1-x}Gd_x$, where $0 \leq x \leq 1$ or $0 < x < 1$. Claims 83, 85, 87, 89 and 91 recites the limitation "said excitation source". There is insufficient antecedent basis for this limitation in these claims or in claim 76 from which they depend.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 62-64, 68, 72, 73, 76-81, 86 and 87 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6, 124-127 of U.S. Patent No. 6,180,029. Although the conflicting claims are not identical, they are not

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patentably distinct from each other because the plasma display panel claimed in the patent has the same structure as that claimed in this application and the phosphors in the patented claimed panel has the same compositions and an average particle and crystallite size and distribution which overlaps and falls within the claimed ranges. It is well known in the art that the excitation source in plasma display panels is xenon gas, thus the patented and claimed panels would be expected to contain xenon gas as the excitation source. Claim 6 teaches the amount of activator in $\text{Zn}_2\text{SiO}_4\text{:Mn}$. This amount falls within the range claimed in this application.

Claims 62-69, 74 and 75 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 19-27 of U.S. Patent No. 6,197,218. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed fluorescent lighting element of the patent suggests that claimed in this application.

Claims 62-64, 72, 73 and 76-81 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-14 and 30-35 are of U.S. Patent No. 7,005,085. Although the conflicting claims are not identical, they are not patentably distinct from each other because the plasma display panel claimed in the patent has the same structure as that claimed in this application and the phosphors in the patented claimed panel has the same compositions and an average particle and crystallite size and distribution which overlaps and falls within the claimed ranges. It is well known in the art that the excitation source in plasma display panels is xenon gas, thus the patented and claimed panels would be expected to contain xenon gas as the excitation source.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 76 and 79-81 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,471,112.

This reference teaches a plasma display panel having the claimed structure, where the phosphor particles in the phosphor layer have an average or mean particle size in the range of 0.05-0.5 microns. 90% of the phosphor particles have a diameter that is within 25% of average particle size. The average thickness of the phosphor layer is about 2 to 3 times the diameter of the phosphor. The method of producing the phosphor taught in column 6 shows the phosphor are single crystals and thus would have a crystallite size that falls within the claimed range. The reference teaches the claimed plasma display panel.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 78 and 81-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,471,112 in view of pages 626-629 of the Phosphor Handbook.

This reference teaches a plasma display panel having the claimed structure, where the phosphor particles in the phosphor layer have an average or mean particle size in the range of 0.05-0.5 microns. 90% of the phosphor particles have a diameter that is within 25% of average

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particle size. This particle size range overlaps that claimed. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference teaches that the panel is trichromatic which means the panel contains a red, green and blue phosphor. The patent does not teach the composition of the red, green and blue phosphors in the panel. The Phosphor Handbook teaches the red, green and blue phosphors conventionally used in plasma display panels in the list on pages 628-629. Thus one of ordinary skill in the art would have found it obvious to use $\text{Y}_2\text{O}_3:\text{Eu}$ or $(\text{Y},\text{Gd})\text{BO}_3:\text{Eu}$ as the red phosphor, $\text{Zn}_2\text{SiO}_4:\text{Mn}$ or $\text{BaAl}_{12}\text{O}_{19}:\text{Mn}$ as the green phosphor and $\text{BaMgAl}_{14}\text{O}_{23}:\text{Eu}$ as the blue phosphor, where the amounts of the activators are the amounts which will product the phosphor. This expected amount at least overlaps the claimed amounts which are also the amount to activate the phosphor. While the patent teaches the plasma display panel contains neon gas, the Phosphor Handbook teaches that the neon gas is conventionally mixed with xenon gas in plasma display panels and it is the xenon gas that acts as the excitation source in the panel. Thus one of ordinary skill in the art would expect and/or find it obvious to use xenon mixed with neon as the gas in the taught panel. The references suggest the claimed panel.

Claims 62-65, 73, 74 and 76-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,725,800 in view of the Phosphor Handbook.

The patent teaches plasma lamps and screens comprising phosphor particles and a gas excitation source. The Phosphor Handbook teaches plasma screen, which is another name for plasma display panels, conventionally have the claimed structure and contains xenon as the

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excitation gas and that plasma lamps conventionally contain xenon or mercury as the gas excitation source. Thus one of ordinary skill in the art would expect the taught plasma systems, which appear to be conventional systems, to have the claimed structure and to contain the claims gases as excitation gas. The patent teaches the phosphor particles are spherical, have crystallite size in the claimed range, an average particle size range in the range of 2-6 microns, which falls within and overlaps the claimed range and a dispersion index is less than 0.4, which suggest a maximum size range that overlaps the claimed range, absent any showing to the contrary. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The references suggest the claimed device and plasma display screens.

Claims 62, 63, 66, 68, 70, 72, 74 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,811,924 in view of the Phosphor Handbook.

This patent teaches a fluorescent lamp, such as a LCD backlight, comprising mercury gas as the excitation source and spherical phosphor particles having an average particle size in the range of 0.2 microns or less and at least 99% of the phosphor particles have a size larger than 0.3 micron. These ranges overlap the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The thickness of the phosphor layer is 0.1-100 microns (col. 12, lines 50-51), which overlaps the claimed range.

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Column 9, line 64 through column 10, line 6 teach the phosphor can be the same as those used in general fluorescent lamps, such as silicates, aluminates and rare earth oxides. Pages 378 and 393 of the Phosphor Handbook teaches these phosphors can be $\text{Y}_2\text{O}_3:\text{Eu}$, $\text{Zn}_2\text{SiO}_4:\text{Mn}$, $\text{BaAl}_8\text{O}_{13}:\text{Eu}$,


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
April 17, 2006


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Tech. Center 1700